

*REMARKS**Pending Claims*

Claims 1-27 and 32-34 are pending in this application. Claims 1 and 16 have been rejected on the ground of nonstatutory obviousness-type double patenting. The Office Action indicated that claims 2-15, 17-27 and 32-34 were allowable, but objected to as being dependent upon rejected base claims. While Applicants thank the Examiner for this indication of allowability, Applicants respectfully traverse the rejection of claims 1 and 16 inasmuch as independent claims 1 and 16 are not properly subject to a double patenting rejection. Accordingly, reconsideration is requested in view of the following remarks.

Nonstatutory Obviousness-Type Double Patenting Rejection

The Office Action rejected claims 1 and 16 on the grounds of nonstatutory obviousness-type double patenting, asserting that the claims are unpatentable over claims 13 and 26, respectively of U.S. Patent 6,900,433 to Ding. The Office Action asserts that claims 13 and 26 recite all of the required limitations of pending claims 1 and 16, respectively, "save the requirement for varying a duty cycle of every n^{th} wave of the rectangular wave."

As an initial matter, Applicants note that the '433 reference was later filed than the pending application, yet it has already issued. Further, the handling at the patent office was similar, that is, both evolved from PCT applications, both filed declarations in response to notices to file missing parts, etc. Accordingly, two-way obviousness determination is required. In other words, the Office Action must show that one would be obvious from the other and vice versa. The rejection simply does not satisfy this requirement, and the rejection should be withdrawn or properly set forth.

Substantively, the Office Action does not set forth a prima facie case of obviousness in either direction, and cannot, inasmuch as obviousness does not exist in either direction. The pending claims relate to two completely different functions performed in a quadrupole ion trap device. The pending claims relate to the trapping function, that is, the varying of the digital signal to vary the predetermined range of mass-to-charge ratio of ions that can be trapped by the quadrupole ion trap device. In sharp contrast, the identified claims of the '433 patent relate to the ejection of trapped ions, that is, applying an additional dipole electric field

assist quadrupole excitation in the ejection of trapped ions having a predetermined mass-to-charge ratio. Accordingly, the difference is not merely “an obvious variation in the wording of the claims,” as suggested in the Office Action, but a fundamental difference in the function.

The Office Action appears to assert that (1) “varying the digital signal to vary the predetermined range of mass-to-charge of ions that can be trapped by the quadrupole device,” as recited in claim 1 of the subject application, is not patentably distinct from the feature of (2) “varying a duty cycle of every n th wave of the rectangular wave voltage, where n is an integral greater than unity, to cause ejection of trapped ions having a predetermined mass-to-charge ratio,” recited in claim 1 of the ‘433 patent. The assertion is unfounded, however, because the above-identified respective features (1) and (2) are used to perform entirely different functions as defined in the respective claims; that is, feature (1) in claim 1 of the subject application is used to vary the range of mass-to-charge of ions that can be trapped by the ion trap device whereas, by contrast, feature (2) in claim 1 of the issued patent is used to eject ions that have already been trapped and that have a predetermined mass-to-charge ratio. Thus, these functions and the steps taken to achieve the functions in the respective claims are entirely unrelated.

Accordingly, one of ordinary skill in the art would not conclude that the invention defined in the pending claims would have been an obvious variation of the invention defined in the ‘433 patent. Moreover, one of ordinary skill in the art would not conclude that the invention defined in the ‘433 patent claims would have been an obvious variation of the invention defined in the pending claims. As a result, Applicants respectfully request that the rejection be withdrawn, and an early Notice of Allowability issued.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Pamela J. Ruschau", is written over a horizontal line.

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